is shining, coming forth for their food toward evening and after showers."

The majority of the snails included in table 1 were observed in the Beech-Hemlock association; a minority were observed in Beech-Maple, pure Maple, and Oak-Maple tree associations. In each tree association area there was a good overhang so that direct penetration of the sun's rays to the forest floor on which the snails were moving was somewhat blocked, but the overhang was by no means dense enough to make the areas dark.

Several of the active snails were observed feeding exposed to direct rays of the sun in open areas of forest. One *Philomycus carolinianus* was found feeding on an unidentified white mushroom at 2:35 P.M. It browsed on the head and stalk of the mushroom during a 20 minute observation period. Another *P. carolinianus* was observed at 2:55 P.M. exposed to the sun feeding on a mushroom. In this instance the slug was stretched out on top of the mushroom; it was active in its exposed position for 15 minutes. It then moved beneath the head of the mushroom and ceased its feeding activity. A young *Triodopsis albolabris* was likewise found partaking of food exposed to the sun at 10:00 A.M.

Gratitude is expressed to members of the Biological Board and to the Preserve officers of the Edmund Niles Huyck Preserve.

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## AN HERMAPHRODITIC MYTILUS

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While hermaphroditism is of common occurrence among mol-

[1] I am indebted to Dr. H. U. Sverdrup, director of the Scripps Institution of Oceanography, for the privileges of the institution during this study.

lusks, especially in the gastropods, a careful search of the literature has revealed only three cases in the Mytilidae. McIntosh (1894) has described an hermaphroditic *Mytilus modiolus* from St. Andrews, Scotland, while Pelseneer (1912) mentions an abyssal mytilid, probably of the genus *Myrina*[2] and the same author (1935, p. 416) gives a record by Bispinghoff of a case of hermaphroditism in *Modiolarca trapezina*.

The following record may therefore be of interest. Among some 800 specimens of *Mytilus californianus* examined in the course of another study I have found one hermaphrodite. In this specimen the right gonad was exclusively female, while the left one contained two patches of male cells. In each of these two areas male and female follicles were indiscriminately mixed, but every follicle was either entirely male or female, indicating the origin of each from a single parent cell.

The cause of such a condition is entirely problematical, but the most probable explanation appears to be a chromosome disorganization in some of the cells of the developing gonad, giving rise to a male determining combination in some of the cells, while the majority retained the (presumably original) female determining combination.

This suggestion accords with the hypothesis of Pelseneer (1894) that "hermaphroditism in Mollusca (is) secondary to a unisexual condition, and, (is) grafted on the female."[3]

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[2] He also mentions "un nouveau genre hermaphrodite, a glande genitale constituée comme celle de *Montacuta*," but does not give its classification.

[3] Fidé Zoological Record, Vol. 31 (1894), Mollusca, p. 30.